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ABSTRACT

Seventeen papers that relate to the use of cooperative learning activities in undergraduate mathematics courses are contained within this collection. Papers were selected by the staff of Project CLUME (Cooperative Learning in Undergraduate Mathematics Education) and organized into categories pertaining to constructivism and the teachers' role, research and effectiveness, and implementation issues. Each paper is preceded by comments prepared by respected professionals in the field of undergraduate mathematics, and each poses some questions that may be helpful in initiating discussion of the article and its implications for practice. Papers include: "Teachers and Learning Groups: Dissolution of the Atlas Complex (Finkel and Monk); "Reducing Student Costs & Enhancing Student Learning (Part II), Restructuring the Role of Faculty" (Guskin); "Collaborative Learning: Shared Inquiry as a Process of Reform" (MacGregor); "A Framework for Research and Curriculum Development in Undergraduate Mathematics Education" (Asiala, Brown, DeVries, Dubinsky, Mathews, and Thomas); "Small-Group Learning and Teaching in Mathematics--A Selective Review of the Research" (Davidson); "When Does Cooperative Learning Increase Student Achievement?" (Slavin); "The Controversy Over Group Rewards in Cooperative Classrooms" (Graves); "Do Students Learn More in Heterogeneous or Homogeneous Groups?" (Good and Marshall); "Within-Class Grouping: A Meta-Analysis" (Lou, Abrami, Spence, Poulsen, Chambers, d'Apollonia); "Restructuring the Classroom: Conditions for Productive Small Groups" (Cohen); "Teaching Problem Solving through Cooperative Grouping (Part I): Group Versus Individual Problem Solving" (Heller, Keith, Anderson); "Learning the Concept of Inverse Functions in a Group Versus Individual Environment" (Vidakovic); "Social Skills for Successful Group Work" (Johnson and Johnson); "Teaching Problem Solving through Cooperative Grouping (Part 2): Designing Problems and Structure Groups" (Heller and Hollabaugh); "Treating Status Problems in the Cooperative Classroom" (Cohen, Lotan, Catanzarite); "The Small-Group Discovery Method in Secondary- and College-Level Mathematics" (Davidson); "Constructing Calculus Concepts: Cooperation in a Computer Laboratory" (Dubinsky and Schwingendorf); and "Annotated Bibliography of Science, Mathematics, Engineering and Technology (SMET) Resources in Higher Education" (Cooper and Robinson). Contains 96 references. (DDR)